

ABSTRACT

An LED lighting array is disclosed wherein a plurality of light emitting devices disposed in at least first and second columns are mounted on a planar mounting surface to form an emission plane. The emission axes of all the LEDs in a first column are parallel with each other and lie in a first plane. The emission axes of the LEDs in an adjacent, second column are also parallel, but a second plane containing the emission axes of the second column is disposed at a predetermined, non-zero angle with respect to the first plane. The non-zero angle is a function of the LED beam width and the distance to a lighting target. This configuration of the LEDs provides an optimum balance at a predetermined target distance between the size of the area illuminated and the brightness of the illumination of the target. In one aspect of the invention the LED lighting array includes at least first, second and third columns of LEDs. In another aspect of the invention an LED task light includes a transparent tube and an LED lighting array disposed within the tube. An electrical drive circuit associated with the mounting substrate within the tube provides pulsed direct current for driving the LED's.